accidental direct hit. Its concrete walls are calculated to withstand a blast pressure equivalent to 100 tons per square yard from any explosives falling alongside. Its round shape and wide base give it great stability.

The top floor is intended to house the ventilating machinery, and the remaining eight floors are for the people. Entrances are by two outside staircases, to the second and third floors respectively, and a series of stairs at the center connects the floors.

It is planned to set up one of these towers for each 400 persons in an industrial plant, or in closely built up urban residence areas. The people could take shelter in them when the raid warning is sounded, remaining until after the hostile planes have flown away. The towers may be incorporated into other building units, or even sunk into the earth.

New though the Draegerwerk tower is, it nevertheless re-emphasizes the old, old aphorism of Ecclesiastes, that there is no new thing under the sun. For nearly a thousand years ago in Ireland, when raiding Vikings harried the coasts and even made incursions inland, towers that look strangely like the new German structures were built alongside the churches.

These round towers of stone, of which examples still stand in perfect condition, were used as refuges during raids, by both clergy and people, who also brought their more portable valuables. The Vikings were never equipped for siege warfare, so that these simple "keeps" were safe enough until the marauders went back to their ships.

Science News Letter, March 19, 1938

AVIATION

Shenandoah Designer Calls Proposed Airship Necessary

By PROF. J. C. HUNSAKER, of the Massachusetts Institute of Technology

THE replacement of the Los Angeles as provided by the pending naval appropriation bill is the necessary step to revive the airship art in this country.

We attempted in the past to go too fast in catching up with the Germans. Nevertheless, we did create adequate building facilities and the beginning of a skilled engineering and operating organization.

The discouragement following the loss of the Akron and Macon has stopped all progress and if continued will virtually hand over to the Germans our exclusive helium resources on the grounds that they can operate zeppelins successfully but we cannot.

A new Los Angeles will hold our building industry together and train American naval personnel in the use of a scouting vehicle of enormous potential value over the wide spaces of the Pacific. The helium-filled airship, especially when carrying airplanes, is of great utility for strategic scouting and surveillance.

The art of flight in a lighter-than-air vehicle is an important branch of aeronautics that should not be neglected by the country having a natural monopoly of helium. While heavier-than-air vehicles are rapidly advancing in reliability and safety, I believe comparable progress is possible with airships.

Their most important service should be as commercial passenger carriers. The Los Angeles replacement would put this country in a position to go ahead on a sound program of commercial airship development, making use of the lessons of our past mistakes.

Science News Letter, March 19, 1938

AVIATION

Sikorsky Foresees High Speed Planes

LOOKING into the future clear past the giant seaplanes now building and contemplated by the airlines, Igor I. Sikorsky, noted airplane designer, foresees the possibility of building 1,000-ton flying clippers capable of carrying thousands of passengers.

One-hundred-ton seaplanes will be crossing the Atlantic in 20 hours on regularly scheduled lines within the next few years, Mr. Sikorsky, credited with designing the first successful multi-motored aircraft, told an audience attending the fourteenth annual Steinmetz Memorial Lecture, in Schenectady, N. Y.

Planes in the thousand-ton class, although well within the range of engineering possibility, he asserted, may not, however, be the most economical. Sufficient traffic to fill them would be difficult to find. But engineers can build them and may yet do so.

"Limit in the size of aircraft in the future will be dictated not by engineering possibilities, but by economical factors and traffic requirements," he explained in recalling the erroneous opinion held during the early days of aviation that, with increase in size, airplanes would lose load carrying efficiency and finally would even be unable to fly.

Predicting practical limits to aeronautical operations, he stated that "it is probable that an altitude of 75,000 to 90,000 feet and a speed of from 500 to 600 miles per hour will not be exceeded until a new source of energy giving greater power per unit of weight, combined with a new method of propulsion becomes available."

Such a new method may well be found, he declared, citing the possibility of developing a method of producing and handling liquid hydrogen for use as a fuel. "Such a development would make possible the circumnavigation of the earth along the Equator in a non-stop flight without refueling."

Science News Letter, March 19, 1938

GENETICS

Methuselah Mice Show How Disease Can Be Cut Down

IF MEN and women knew as much about their own heredity as science knows about that of mice, humanity could hope for a future free of disease. This appears to be the conclusion of studies which Dr. Maud Slye, University of Chicago scientist, described to members of the Women's National Press Club in Washington, D. C.

Cancer is not the only disease from which Dr. Slye can protect her mice. In the mouse paradise she provides for them they are protected from all the other ills to which mice are heir. They live to be Methuselah mice, dying peacefully at an age which, if mice were men, would give a life span of 720 years.

Dr. Slye urged laymen and medical men to keep human heredity records such as those she has kept for 165,000 mice during the last 30 years. Such records give the knowledge on which the Methuselah race of mice has been built and might lead to a similarly long-lived, healthy human race.

Science News Letter, March 19, 1938

Evaporated goat milk is now a commercial product.